

## **LISTING OF THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**1. (Original)** A finger/palm print image processing system comprising:

a frequency component analysis unit configured to perform a frequency analysis on each of plural small regions into which a finger/palm print image is divided, to obtain plural frequency components representing each of the plural small regions; and

a frequency component judgment unit configured to judge clarity of the small regions corresponding to the frequency components, based on the frequency components, wherein:

said finger/palm print image indicates at least one of a finger print and a palm print;

said frequency component analysis unit obtains a first analysis result of performing a frequency analysis on a center portion of the small region, and a second analysis result of performing a frequency analysis on the small region including peripheral portions; and

said frequency component judgment unit judges the small region to be a region having a fine structure if a difference exists between the first and second analysis results, or judges the small region to be a region having a monotonous flow if no difference exists between the first and second analysis results.

**2. (Original)** The finger/palm print image processing system according to claim 1, wherein:

said frequency component analysis unit uses a Fourier transform as the frequency analysis; and

said frequency component judgment unit judges clarity of the small region corresponding to the frequency components, based on the frequency components and a result of subjecting a clear two-dimensional sinusoidal wave to a Fourier transform.

**3. (Previously Presented)** The finger/palm print image processing system according to claim 1, wherein

said frequency component analysis unit decides one point in a frequency space as the frequency components based on a result of the frequency analysis, and approximates the small

region corresponding to the frequency components, to a representative point two-dimensional sinusoidal wave as a two-dimensional sinusoidal wave corresponding to the one point in the frequency space.

**4-8. (Canceled).**

**9. (Previously Presented)** The finger/palm print image processing system according to claim 1, further comprising

a ridgeline image extraction unit configured to change a method of extracting ridgelines from the finger/palm print image in the small region, based on the judgment result of clarity of the small region for each of the plural small regions, and to extract the ridgelines.

**10-11. (Canceled).**

**12. (Original)** A finger/palm print image processing method comprising:

a step (a) of performing a frequency analysis on each of plural small regions into which a finger/palm print image is divided, to obtain plural frequency components representing each of the plural small regions, the finger/palm print image indicating at least one of a finger print and a palm print; and

a step (b) of judging clarity of the small regions corresponding to the frequency components, based on the frequency components, wherein:

said step (a) includes a step (a4) of obtaining a first analysis result performing a frequency analysis on a center portion of the small region, and a second analysis result performing a frequency analysis on the small region including peripheral portions; and

said step (b) includes a step (b3) of judging the small region to be a region having a fine structure if a difference exists between the first and second analysis results, or judging the small region to be a region having a monotonous flow if no difference exists between the first and second analysis results.

**13. (Original)** The finger/palm print image processing method according to claim

12, wherein:

said step (a) includes a step (a1) of using a Fourier transform as the frequency analysis;  
and

said step (b) includes a step (b1) of judging clarity of the small region corresponding to the frequency components, based on the frequency components and a result of subjecting a clear two-dimensional sinusoidal wave to a Fourier transform.

**14. (Previously Presented)** The finger/palm print image processing method according to claim 12, wherein

said step (a) includes:

a step (a2) of deciding one point in a frequency space as the frequency components, based on a result of the frequency analysis; and

a step (a3) of approximating the small region corresponding to the frequency components, to a representative point two-dimensional sinusoidal wave as a two-dimensional sinusoidal wave corresponding to the one point in the frequency space.

**15-19. (Canceled).**

**20. (Previously Presented)** The finger/palm print image processing method according to claim 12, further comprising

a step (d) of changing, for each of the plural small regions, a method of extracting ridgelines from the finger/palm print image in the small region, based on the judgment result of clarity of the small region, and extracting the ridgelines.

**21-22. (Canceled).**

**23. (Currently Amended)** A program on a computer readable storage unit for making a computer execute a method, the program comprising:

a step (a) of performing a frequency analysis on each of plural small regions into which a finger/palm print image is divided, to obtain plural frequency components representing each of

the plural small regions, said finger/palm print image indicating at least one of a finger print and a palm print; and

a step (b) of judging clarity of the small regions corresponding to the frequency components, based on the frequency components, wherein:

said step (a) includes a step (a4) of obtaining a first analysis result performing a frequency analysis on a center portion of the small region, and a second analysis result performing a frequency analysis on the small region including peripheral portions; and

said step (b) includes a step (b3) of judging the small region to be a region having a fine structure if a difference exists between the first and second analysis results, or judging the small region to be a region having a monotonous flow if no difference exists between the first and second analysis results.

**24. (Original)** The program according to claim 23, wherein:

said step (a) includes a step (a1) of using a Fourier transform as the frequency analysis; and

said step (b) includes a step (b1) of judging clarity of the small region corresponding to the frequency components, based on the frequency components and a result of subjecting a clear two-dimensional sinusoidal wave to a Fourier transform.

**25. (Previously Presented)** The program according to claim 23, wherein

said step (a) includes:

a step (a2) of deciding one point in a frequency space as the frequency components, based on a result of the frequency analysis; and

a step (a3) of approximating the small region corresponding to the frequency components, to a representative point two-dimensional sinusoidal wave as a two-dimensional sinusoidal wave corresponding to the one point in the frequency space.

**26-30. (Canceled).**

**31. (Previously Presented)** The program according to claim 23, further comprising

a step (d) of changing, for each of the plural small regions, a method of extracting ridgelines from the finger/palm print image in the small region, based on the judgment result of clarity of the small region, and extracting the ridgelines.